Airworthiness Directive Schedule

Propellers & Propeller Governors

Hartzell Series

28 November 2013

Notes

1. This AD schedule is applicable to Hartzell propellers manufactured under FAA Type Certificate Numbers:

Propeller Series:	FAA Type Certificate Number:
BHC-A2	P24EA and P-908
BHC-C2	P-920
BHC-J2	P37EA
HC-82	P-878
HC-92	P16EA and P-892
HC-A3 and HC-83	P6EA
HC-B3	P15EA and P-907
HC-B4	P56GL
HC-B4T	P40EA
HC-C2	P-920
HC-82	P24EA
HC-C3	P25EA
HC-C4	P52GL
HC-D4 and HC-E4	P10NE
HC-E2	P9EA
HC-E3	P33EA
HC-F2	P27EA
HC-F3YR	P31EA
HC-I3	P33EA
HC-M2 and HC-2M	P43GL
PHC-C3	P25EA
PHC-G3	P55GL
PHC-J3	P36EA

2. The FAA is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for Hartzell propellers. State of Design ADs applicable to these propellers can be obtained directly from the FAA web site. The link to the FAA web site is available on the CAA web site at http://www.caa.govt.nz/Airworthiness_Directives/states_of_design.html
3. The date above indicates the amendment date of this schedule.
4. Many of the following airworthiness directives contain brackets in the applicability paragraph. The brackets that appear in the propeller models indicate the presence or absence of additional letter(s) which vary the basic propeller hub model designation. The airworthiness directive is applicable regardless of whether these letters are present or absent on the propeller hub model designation.
5. New or amended ADs are shown with an asterisk *

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From 1 October 2012 the Civil Aviation Authority of New Zealand (CAA) will no longer rewrite the text of State of Design ADs. Applicable State of Design ADs will be listed below with linked directly to them. You can also obtain them directly from the National Airworthiness Authority (NAA) web sites. Links to the NAA web sites are available on the CAA web site at http://www.caa.govt.nz/Airworthiness_Directives/states_of_design.html If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ they will be added to the list below. 35

72-08-04	T10173( ) and T10176( ) Blades – Inspection and Replacement	35
87-15-05R1	Propeller Blades – Inspection and Replacement	35
94-03-11	Propeller Hub Arm Assemblies – Inspection and Replacement	35
95-03-03	Propeller Hub Arm Bore – Inspection and Replacement	35
* 2013-15-04	Hydraulic Bladder Diaphragm	35

DCA/HARTZ/101 Cancelled - Purpose Fulfilled

DCA/HARTZ/102 Split Rings - Modification

Applicability: HC-82X20-1B all except HC-2AX series

Requirement: To eliminate the possibility of split ring failures the following action must be taken:

1. All split rings P/N A-159 (including spares stocks) are to be withdrawn from service and mutilated to prevent further use not later than the completion of 50 hours TIS commencing 21 November 1958.

2. All topdressing aircraft shall be fitted with split rings P/N A-969. This will involve modification to the bearing according to Hartzell instructions and the addition of the numeral `1' after dash number of propeller. In the case of propellers on topdressing aircraft using engines of 225 hp or less with split rings P/N A-159-N already fitted, these rings may continue in service until next overhaul when split rings P/N A-969 shall be fitted.

3. Propellers fitted to engines exceeding 225 hp on topdressing operations must be fitted with A-969 split rings before further flight.

4. Normal category aircraft may have split rings P/N A-159-N, but rings P/N A-969 are strongly recommended.

5. All split rings shall be replaced at each overhaul.

6. In the case of propellers fitted to FU-24 (O-470-N) aircraft, split ring replacement must be accomplished in accordance with the provisions of NZCAR, Part III, Leaflet B.28-3.

7. Check that saw cuts of split rings are located on each side of the spider arm, or in plane of rotation, during assembly of propellers incorporating such rings.

Note: All work to be carried out in approved propeller overhaul shops.

Compliance: At overhaul

DCA/HARTZ/103 Cancelled - Purpose Fulfilled

DCA/HARTZ/104 Cancelled - Purpose Fulfilled

DCA/HARTZ/105 Cancelled - Purpose Fulfilled

DCA/HARTZ/106 Cancelled - Purpose Fulfilled

DCA/HARTZ/107 Cancelled - Purpose Fulfilled

DCA/HARTZ/108 Cancelled - Purpose Fulfilled

DCA/HARTZ/109 Cancelled - Purpose Fulfilled

DCA/HARTZ/110 Cancelled - Purpose Fulfilled

DCA/HARTZ/112 Cancelled - Purpose Fulfilled

DCA/HARTZ/114B Blade Clamps and Blade Bearing Races - Inspection

Experience with propellers using blade clamps has shown that, in addition to periodic blade clamp inspections, a part overhaul life inspection of bearing races for circumferential cracks is necessary

Applicability: All models with clamps on piston engine installations

Requirement: 1. Remove and crack check blade clamps using magnetic particle inspection method. Particular attention should be paid to the inside surface of the clamps around the nipple tappings and bolt locations.

2. Remove blade bearing and inspect for serviceability. Crack check inner and outer bearing races.

3. Replace any clamp or bearing found defective before further flight.

Compliance: Agricultural aircraft - at intervals not exceeding half overhaul life except that propellers installed on Aerocommander B1 (Intermountain Callair) aircraft shall be inspected at intervals not exceeding 500 hours TIS.

Non agricultural aircraft - at intervals not exceeding half overhaul life for propellers with clamps having 4000 or more hours TIS or where TTIS is unknown

Effective Date: DCA/HARTZ/114A - 31 October 1973
DCA/HARTZ/114B - 14 April 1978

DCA/HARTZ/115 Hub Spiders - Inspection

Applicability: HC-12X20-1, -2, -3, -5, -7B

Requirement: Hub spiders are to be replaced in accordance with Hartzell SB 32 amended 11 August 1964.

(FAA AD 64-28-1 also refers)

Compliance: Within the next 100 hours TIS and thereafter every 25 hours TIS

DCA/HARTZ/116C Cancelled - DCA/HARTZ/139 now refers

DCA/HARTZ/117A Cancelled - Purpose Fulfilled

DCA/HARTZ/118 Blade and Hub - Inspection

Applicability: HC-92ZF-8847 when fitted to agricultural aircraft

Requirement: Hartzell SB 78

Compliance: Every 500 hours TIS for propellers with over 1000 hours TIS

DCA/HARTZ/119 Blade - Inspection

Applicability: Blades of design 7633-4 built prior to April 1968

Requirement: Hartzell SB 96

Compliance: As detailed

DCA/HARTZ/120B Blades - Inspection & Shot Peening

Applicability: 1. C8475 type blades with HC-E2YK-2B & HC-E2YR-2B propellers

2. ( )( )7666A-( ) "Y" shank blades with S/N below C38994 used on but not limited to HC-C2YK-1( )( ), HC-C2YK-2( )( ) & HC-C2YK-4( )( ) propellers. Those blades only used with HC-C2YK-2(-G)( ) dampered type propellers (hub model designation with "G" suffix letter) are excluded.

3. All other "Y" shank blades listed in Hartzell SB 97A.

Requirement: To detect blade shank cracks and prevent possible blade failure, accomplish the following:

1. Applicable to C8475 type blades with HC-E2YK-2B & HC-E2YR-2B propeller.

(a) Inspect blade shanks and rework as necessary in accordance with Hartzell SB 94A.

(b) Inspect blade balance hole and rework in accordance with Hartzell SB 97A.

2. Applicable to ( )( )7666A-( ) "Y" shank blades with S/N below C38994, as detailed in AD Schedule.

(a) Inspect blade shanks in accordance with Hartzell SB 97A.

(b) Rework or replace blades as necessary in accordance with Hartzell SB 108.

3. Applicable to all other "Y" shank blades listed in Hartzell SB 97A.

(a) Inspect and rework as necessary in accordance with Hartzell SBs 94A and 97A.

(FAA ADs 73-10-03 and 75-07-05 refer)

Compliance: 1. At intervals not exceeding 1000 hours TIS.

2. Within the next 100 hours TIS, unless already accomplished, and thereafter at intervals not exceeding 1000 hours TIS.

3. At each overhaul.

Effective Date: 1 May 1975

DCA/HARTZ/121 Cancelled – Purpose Fulfilled

Effective Date: 23 February 2012

DCA/HARTZ/122 Inspection and Shot Peening of Blades

Applicability: Propellers and blades fitted to United Aircraft of Canada PT6A, Airesearch TPE 331 and Allison 250-B engines as detailed in the FAA directive.

Requirement: FAA AD 72-08-04

Compliance: As detailed in FAA AD 72-08-04.

Effective Date: 11 April 1972

DCA/HARTZ/123A Spring Back up Kit - Modification

Applicability: Models HC-E2YK-2RB, HC-E2YR-2RB and HC-E2YL-2( ) propellers equipped with 8465-7R, 7663-4 or J7663-4 non-counterweighted type blades

Requirement: Hartzell SL 62.

(FAA AD 71-21-9 refers)

Compliance: At overhaul

Effective Date: DCA/HARTZ/123 - 31 August 1972
DCA/HARTZ/123A - 31 March 1978

DCA/HARTZ/124 Blades - Replacement

Applicability: All HC-C3YR-1/8475R propellers installed on Lycoming IO-720 series engines and all other "Y" shank model 8475 and 8477 non-counterweighted blades

Requirement: Install blades incorporating strengthened pitch change knob identified with letter `F', per Hartzell SB 101

Compliance: By 1200 hours TIS. Blades with 1000 hours or more TIS within next 200 hours TIS

Effective Date: 18 September 1974

DCA/HARTZ/126A Blades - Inspection and Shot Peening

Applicability Models HC-92WK-( ) and HC-92ZK-( ) series propellers which may be installed on but not limited to; Beech 95 series, Cessna 172, 175, Mooney M20A, Piper PA-23, PA-24, PA-25 and Lake LA-4.

Requirement: To prevent propeller blade separation, accomplish the following:-

1. Inspect blade clamp screw per Procedure No. 1 of Hartzell SB 202. If any clamp screws are found loose or broken , remove propeller and send to a repair organisation for disassembly and inspection per Procedure No. 2 of SB 202. If cracks are found during a dye penetrant inspection of the blade shank, replace with a serviceable blade that has been compressively rolled in the blade shank.

2. Send to a repair organisation for disassembly and inspection per Procedure No. 2 of SB 202. If cracks are found during a dye penetrant inspection of the blade shank, replace with a serviceable blade that has been compressively rolled in the blade shank.

(FAA AD 95-11-08 refers)

Compliance: 1. Within next 25 hours TIS.

2. At 300 hours TIS since last dye penetrant inspection or compliance with DCA/HARTZ/168, or within next 25 hours TIS whichever is the later. Thereafter at intervals not to exceed 500 hours TIS.

Effective Date: DCA/HARTZ/126 - 18 September 1974
DCA/HARTZ/126A - 4 August 1995

DCA/HARTZ/127 Cancelled: DCA/HARTZ/120B now refers

DCA/HARTZ/128 Damper Assembly Screws - Replacement

Applicability: Models HC-C2YK-2CG(F)/(F)C7666A and HC-C2YK-2CLG(F)/(F)JC7666A with damper assembly C-1576 having S/N detailed in Hartzell SB 103 and installed on Piper PA-34 series aircraft

Requirement: Hartzell SB 103.

Compliance: Within the next 100 hours TIS

Effective Date: 31 May 1974

DCA/HARTZ/129 Hard Alloy Blades - Surface Cracks

Applicability: Hartzell T10173H( )-( ), T10176H( )-( ), T10178H( )-( ) and T10282H( )-( ) hard alloy type blades

Requirement: Hartzell SB 105A

(FAA AD 74-14-01 refers)

Compliance: All blades with less than 1000 hours TIS within the next 50 hours TIS. Blades with more than 1000 hours TIS are not affected

Effective Date: 18 September 1974

DCA/HARTZ/130A Attachment Bolts - Torque Check and Replacement

Applicability: All models HC-B3TN-2, HC-B3TN-3, HC-B3TN-5, HC-B4TN-3, HC-B4TN-5, HC-B4MN-5 and HC-B5MP-3 turbo propellers not installed with P/N B-3339 bolts and P/N A-2048-2 washers.

Requirement: To prevent propeller attaching bolt failures or improperly secured propellers, which could lead to separation of the propeller from the aircraft, accomplish the following:

1. On propellers presently installed with P/N A-2047 attachment bolts, check the torque of all eight propeller attaching bolts (with washers installed) with a torque wrench and an appropriate adapter. The torque should be 100 ft.lbs to 125 ft.lbs, with dry threads. Do not use any lubricant with the P/N A-2047 bolts.

If the torque of each P/N A-2047 bolt is within the 100 ft.lbs to 125 ft.lbs torque range, safety wire lock all attaching bolts in a manner approved by the manufacturer. At next propeller disassembly, remove all eight bolts and washers and replace with P/N B-3339 bolts and P/N A-2048-2 washers, or other equivalent manufacturer approved serviceable bolts and washers, per requirement 2 of this AD.

If the torque of any one of the bolts is found to be less than 100 ft.lbs, remove all eight bolts and washers and replace with P/N B-3339 bolts and P/N A-2048-2 washers, or other equivalent manufacturer approved bolts and washers, per requirement 2 of this AD.

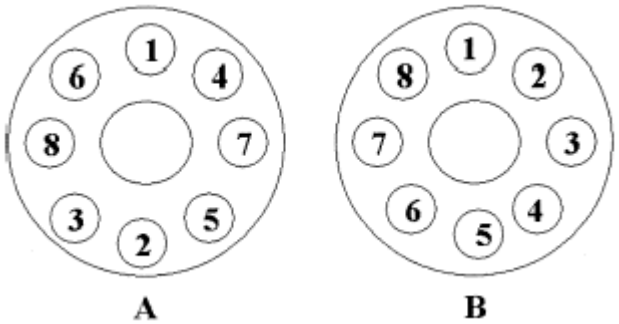
2. Install all new propellers and serviceable propellers with P/N B-3339 bolts and P/N A-2048-2 washers, or other equivalent manufacturer approved serviceable bolts and washers, per Hartzell Owner's Manual 139 (61-00-39) and Hartzell service instruction 140A, revision 9, taking note of the following:

(a) Install the propeller oil seal to the engine flange after ensuring that the engine and propeller flanges are clean.

(b) Carefully install propeller on the engine flange ensuring that complete and true contact is established.

(c) Apply MIL-T-83483 Petrolated Graphite, or Hartzell Lubricant P/N A-3338 to threads of the eight P/N B-3339 attaching bolts (and remainder of bolt if desired) and to the flat surfaces of the eight P/N A-2048-2 washers, or other equivalent manufacturer approved serviceable bolts and washers, and install the attaching bolts and flat washers through the engine flange and into the propeller flange.

(d Torque all attaching bolts with a torque wrench and an appropriate adapter, to 40 ft.lbs, and then to 80 ft.lbs, following sequence "A" (shown below). Final torque all attaching bolts using sequence "B" (shown below) to 100 ft.lbs to 105 ft.lbs. Safety wire lock all attaching bolts in a manufacturer approved manner.



Note 1: A bolt with P/N A-2047 has the letter "H" stamped inside a triangle on the bolt. A bolt with P/N B-3339 has the P/N stamped inside the cupped head.

Note 2: The replacement of propeller attachment bolts and washers with P/N B-3339 bolts and P/N A-2048-2 washers, or other equivalent manufacturer approved serviceable bolts and washers, per Hartzell Owner's Manual 139 (61-00-39) and Hartzell service instruction 140A, revision 9, is a terminating action to this AD.

(FAA AD 83-08-01 R2 refers)

Compliance: 1. Within 300 hours TIS.

2. With every propeller replacement.

Effective Date: DCA/HARTZ/130 - 27 May 1983
DCA/HARTZ/130A - 6 May 2005

DCA/HARTZ/131A Blade Clamp Assemblies - Inspection and Removal from Service

Applicability: All model ( )HC-( )( )(X,V) series propellers with Hartzell P/N C-3-( ) blade clamp assemblies with S/N prior K6337

Requirement: To prevent clamp failure:

1. Remove from service all clamp assemblies with mismatching S/N's on each clamp half, or with unreadable S/N's.

2. Remove from service all clamp assemblies with S/N in range 0 through D5293, or inspect as follows:

(a) Visually inspect internal, inboard radius area of clamps, especially next to the clamp bolt hole, and remove from service all clamps with signs of corrosion.

(b) Magnetic particle inspect all internal and external surfaces of clamp per Hartzell Specification No. H-S-7 dated 4 August 1981, or approved equivalent and remove from service all clamps with signs of cracks.

(c) Dye-penetrant inspect all external surfaces of clamp assemblies and remove from service all clamps with signs of cracks.

3. Accomplish the following on all blade clamp assemblies with S/N's in range D5294 through K6336 per Hartzell SI 159B.

(a) Using 10 power magnification, visually inspect inner bearing race radius, especially next to inner clamp bolt hole, for defects such as corrosion, tool marks, gouges, scratches etc.

(b) Remove all evidence of defects, and remove from service all clamps which exceed rework limitations specified in SI 159B.

(c) Magnetic particle inspect, and remove from service all cracked clamps.

(d) Replace all reworked clamps.

(FAA AD 85-14-10R2 refers)

Compliance: By 11 December 1987, unless already accomplished. Repeat inspections required per para 2(c) at intervals not exceeding 100 hours TIS

Effective Date: DCA/HARTZ/131 - 28 February 1986
DCA/HARTZ/131A - 9 October 1987

DCA/HARTZ/132 Cancelled: Purpose fulfilled

DCA/HARTZ/133D Hub - Inspection

Applicability: Model ( )HC-( )3Y( )-( ) series propellers with S/Ns detailed in Hartzell SB 165DE and installed on aircraft with Lycoming (L)TIO-540 series engines; or installed on agricultural aircraft regardless of engine type. These propellers are installed on but not limited to: FU24-950/954, PL-12/T-300, PA-31, PA-31-325, PA-31-350, PA-31P-350 and PA-32(R)-301T.

Requirement: To prevent hub failure due to cracks that originate in the grease fitting holes on the hub, which could result in propeller blade separation and loss of the aircraft, accomplish the following:-

1. Perform a combination of visual and eddy current inspection per Hartzell SB 165E. Remove propellers with cracked hubs from service before further flight.

2. Replace with later style hub (post 1983) per SB 165E.

(FAA AD 94-17-13 refers)

Compliance: 1. Inspection:

(a) For Piper PA-31-325, PA-31-350 aircraft, inspect within next 10 hours TIS and thereafter at intervals not to exceed 10 hours TIS.

(b) Agricultural aircraft, inspect within next 25 hours TIS and thereafter at intervals not to exceed 25 hours TIS.

(c) For all other affected aircraft, inspect within next 50 hours TIS and thereafter at intervals not to exceed 50 hours TIS.

(d) If any abnormal or unexplained changes occur in propeller vibration or grease leakage, inspect prior to further flight.

2. Replacement:

For Piper PA-31-325, PA-31-350 and Agricultural aircraft, replace at next overhaul or by 30 June 1995, whichever occurs first.

Note 1: Propeller hubs affected by this AD that have been removed from service cannot be returned to service on aircraft types that are not subject to this AD. Cumulative fatigue damage may have occurred that is not yet detectable.

Note 2: Alternative Rework. Performing interim modification per SB 165E allows an operator to extend the inspection period and replacement time of the propeller hub. This is considered an alternative means of compliance and a concession is required. Applications for a concession should be made on Form MOT 2120.

Effective Date: DCA/HARTZ/133C - 24 August 1993
DCA/HARTZ/133D - 28 October 1994

DCA/HARTZ/134G Propeller Hub – Inspection and Replacement

Applicability: Model ( )HC-( )2Y( )-( ) propeller models (also known as Y-shank propellers) installed on Piper PA-32 series aircraft with Textron Lycoming 540 series engines that are rated at 300 HP or higher.

Model ( )HC-( )2Y( )-( ) propeller models (also known as Y-shank propellers) installed on Pilatus Britten Norman or Britten Norman BN-2 series aircraft (also known as Islander or Trislander) with Textron Lycoming 540 series engines.

Model ( )HC-( )2Y( )-( ) propeller models (also known as Y-shank propellers) installed on any aircraft certificated in the aerobatic category or used for aerobatics.

Model ( )HC-( )2Y( )-( ) propeller models (also known as Y-shank propellers) installed on any aircraft that have been or are used for agricultural operations.

Note 1: For reference the aircraft and propellers listed in table 2 of Hartzell Propeller Inc. SB No. HC-SB-61-227 revision 5 are affected by this AD. For aircraft not listed in table 2 of the SB, review the AD applicability to determine if the propeller hub fitted to the aircraft is affected.

Note 2: This AD revised to clarify the compliance and the requirements. This AD does not apply to Hartzell ( )HC-( )2Y( )-( ) propeller models with the suffix letter "B" at the end of the hub S/N.

Note 3: Affected propellers have model numbers in the form of ( )HC-( )2Y( )-( ), which have no suffix letter or have the suffix letter "A" or "E" at the end of the hub S/N. The parentheses appearing in the propeller model number indicates the presence or absence of an additional letter(s) that varies the basic propeller model. This AD applies regardless of whether these letters are present or absent in the propeller model designation.

Note 4: This AD is applicable to affected propellers regardless whether the propeller has been modified, altered, or repaired in the area subject to the requirements of this AD. For propellers that have been modified, altered or repaired so that the accomplishment of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance. The application should include an assessment of the effect of the modification, alteration or repair on the unsafe condition addressed by this AD, and if the unsafe condition has not been eliminated, the request should include specific actions to address it.

Requirement: To prevent failure of the propeller hub due to possible cracks, which could result in blade separation and loss of aircraft control, accomplish the following:

1. Eddy Current Inspection:

Accomplish an Eddy Current Inspection (ECI) of the propeller hub fillet radius for cracks per Hartzell Propeller Inc. SB No. HC-SB-61-227 revision 5, dated 28 Sep 2006 or later FAA approved revisions.

If any cracks are found, replace the propeller hub before further flight.

If no cracks are found, permanently mark the end of the hub S/N with the suffix letter "E" per the instructions in SB No. HC-SB-61-227.

2. Hub Replacement:

For propellers with S/N DN3607A, DN3609A, DN3613A, DN3615A, DN3628A, DN3630A, DN3641A, DN3940A, DN3944A, DN3949A and DN3962A replace the hub with serviceable parts per the instructions in SB No. HC-SB-61-227.

3. Hub Replacement:

For propellers with suffix "A" at the end of the S/N, (excluding S/N DN3607A, DN3609A, DN3613A, DN3615A, DN3628A, DN3630A, DN3641A, DN3940A, DN3944A, DN3949A and DN3962A) replace the hub with serviceable parts per SB No. HC-SB-61-227.

4. Reuse of Affected Propellers:

A propeller hub removed from service from an affected aircraft may not be reused on any aircraft.

Note 5: The replacement of an affected propeller hub per the instructions in SB No. HC-SB-61-227 with a Hartzell propeller hub with a suffix letter "B" at the end of the hub S/N is a terminating action to ECI inspection requirements of this AD.

Note 6: The inspections and hub replacements mandated by this AD must be accomplished per the instructions in Hartzell Propeller Inc. SB No. HC-SB-61-227 revision 5, dated 28 September 2006 or later FAA approved revisions.

(FAA AD 2001-23-08 refers)

Compliance: 1. Within the next 50 hours TIS unless previously accomplished within the last 150 hours TIS, and thereafter at intervals not to exceed 150 hours TIS.

2. At the next overhaul but not to exceed 1000 hours TIS or 72 months, whichever occurs sooner after 20 December 2001 (the effective date of DCA/HARTZ/134D).

3. Propeller hubs installed on any aircraft that have been used for agricultural operations:

At next overhaul but not to exceed 2000 hours TIS or 36 months, whichever occurs sooner after 20 December 2001 (the effective date of DCA/HARTZ/134D).

Propeller hubs installed on aircraft certificated in the acrobatic category:

At next overhaul but not to exceed 1000 hours TIS or 72 months, whichever occurs sooner after 20 December 2001 (the effective date of DCA/HARTZ/134D).

Propeller hubs installed on Piper PA-32 series aircraft with Textron Lycoming 540 series engines that are rated at 300 HP or higher, or installed on Pilatus Britten Norman or Britten Norman BN-2 series aircraft (also known as Islander or Trislander) with Textron Lycoming 540 series engines:

At next overhaul but not to exceed 2000 hours TIS or 72 months, whichever occurs sooner after 20 December 2001 (the effective date of DCA/HARTZ/134D).

4. From 23 December 2010.

Effective Date: DCA/HARTZ/134F - 1 June 2006
DCA/HARTZ/134G - 23 December 2010

DCA/HARTZ/135 Cancelled – Purpose fulfilled and DCA/HARTZ/146 refers

Effective Date: 29 November 2007

DCA/HARTZ/136 Hub and Blade - Inspection and Replacement

Applicability Models HC-B4TN-5(D,G,J)L/LT10282(B,K)-5.3R, HC-B4TN-5(D,G,J)L/LT10282N(B,K)-5.3R, and HC-B4TN-5(D,G,J)L/LT10282NS(B,K)-5.3R propellers installed on Mitsubishi MU-2B-26A, -36A, -40, -60 and any other MU-2 series aircraft.

Requirement: To prevent initiation of fatigue cracks in propeller assemblies and possible blade separation, accomplish FAA AD 95-01-02.

Compliance: Compliance is required as detailed in FAA AD 95-01-02.

Effective Date: 30 August 1996

DCA/HARTZ/137 Blade - Inspection

Applicability Model HC-B3TN, HC-B5MP, HC-E4A and HC-D4N series propellers equipped with propeller blades identified by S/N in Hartzell ASB HC-ASB-61-220. These propellers may be installed on but not limited to Ayres S2R series aircraft.

Requirement: To prevent propeller blade separation caused by propeller blade shank cracks emanating from forging flaws, accomplish the following:-

Disassemble the propeller and perform a one-time fluorescent dye penetrant inspection of a twelve inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks per ASB HC-ASB-61-220. Remove from service prior to further flight, propeller blades exhibiting forging flaws or cracks, and replace with serviceable parts.

(FAA AD 96-15-04 refers)

Compliance: Propellers installed on agricultural or aerobatic aircraft, within next 10 hours TIS. For propellers installed on other aircraft, within next 60 hours TIS.

For propellers that have not been inspected per this airworthiness directive and experience a sudden or unusual vibration, inspect prior to further flight.

Effective Date: 30 August 1996

DCA/HARTZ/138 Hub - Replacement

Applicability: Models HC-A3VF-7( ), HC-B3TF-7( ), HC-B3MN-3( ), HC-B3TN-2( ), HC-B3TN-3( ), HC-B3TN-5 ( ), HC-B4MN-5( ), HC-B4MP-3( ), HC-B4TN-3( ), HC-B4TN-5( ), HC-B5MA-3( ), HC-B5MP-3( ), HC-B5MP-5( ), HC-B3MN-5( ), HC-B3TN-4( ), HC-B4MP-4( ), and HC-B5MN-3( ) propellers.

These propellers may be installed on but not limited to the following aircraft: ASTA N22B, N24A; Ayres Corporation S-2R; Beech A36, 65-90, 65-90A, C90; Cessna 208, 208A, 421, 402, P210N; de Havilland DH.114, DHC-2, DHC-6; Embraer EMB-110P1, EMB-110P2; Mitsubishi MU-2B series; Pacific Aerospace 08-600; Pilatus PC-6/A-H2, /B1-H2, /B-H2, /B2-H2, /B2-H4, PC-7; Piper PA31-T1, -T2, -T3; PA31P; Schweizer (Grumman) G-164A, G-164B; and Twin Commander 690A, 690B, 690C, 695, 695A.

Requirement: To prevent propeller hub, blade, or blade clamp failure, accomplish the following:

1. Disassemble the propeller in accordance with Hartzell Propeller Inc. Service Manual 118F, Revision 2, dated May 1992, pages 15 to 19, for 3- and 4- bladed hub models, and Service Manual 132A, Revision 2, dated June 1992, pages IV-5 to IV-11, for 5- bladed hub models. Remove the hub from service, and replace the hub with a serviceable hub per the compliance schedule in Table 1 of this AD.

Utilise Table 1 of this AD in accordance with the following example: Model HC-B3TN-3( ) series propellers, starting with S/N BU1 through BU377, require replacement before the end of March of calendar year 1997. S/N BU378 through BU754 require hub replacement before the end of September of 1997, and so forth.

The affected hubs can only be replaced with serviceable hubs having a S/N not listed in Table 1 of this AD for that propeller model, or serviceable hubs having a S/N for which replacement is not yet required in accordance with Table 1 of this AD.

Some existing propeller hub S/Ns include a suffix letter, such as an "A." The presence or absence of this letter has no significance in determining compliance.

Since a hub may be used in various propeller models, the S/N and the model number shown in Table 1 of this AD may not coincide. Precedence is given to the hub S/N in determining compliance requirements. The hub model is only given as a reference.

Hub replacement must be accomplished by the end of the calendar month indicated at the top of the appropriate column in Table 1 of this AD. The S/N ranges in this table identify the propeller hubs that require replacement by the end of that month.

2. Perform a fluorescent penetrant inspection of blades for cracks in accordance with Hartzell Propeller Inc. SB 136H, dated March 12, 1993, prior to installing a serviceable hub.

Perform magnetic particle inspection of blade clamps for cracks in accordance with Hartzell Service Manual 202A, dated March 1993, pages 201 to 215, prior to installing a serviceable hub.

If cracks are found in either the blade or the blade clamps, prior to further flight replace with serviceable blade or blade clamps.

Reassemble the propeller in accordance with Hartzell Propeller Inc. Service Manual 118F, Revision 2, dated May 1992, pages 57 to 96, for 3- and 4-bladed hub models, and Service Manual 132A, Revision 2, dated June 1992, pages VII-1 to VII-46, for 5-blade hub models.

(FAA AD 96-18-14 refers)

Note: This AD requires no action for operators with Hartzell propeller models HC-B4TN-5(D,G,J)L/LT10282(B,K)-5.3R, HC-B4TN-5(D,G,J)L/LT10282N(B,K)-5.3R, and HC-B4TN-5(D,G,J)L/LT10282NS(B,K)-5.3R installed on Mitsubishi MU-2B-26A, - 30, -36A, -40, -60 and any other MU-2 Series aircraft which have the referenced propeller models installed. These operators must however, comply with DCA/HARTZ/136.

Compliance:

	Replacement is due by end of	**March 1997**	**Sept. 1997**	**March 1998**	**Sept. 1998**	**March 1999**	**Sept. 1999**
Hub Model Number	**S/N Series**						
HC-B3TN-3	BU	1-377	378-754	755-1881	1882-3008	3009-3840	3841-4673
HC-B3MN-3	GB						
HC-B3MN-5	FZ						
HC-B3TN-5	BV	1-86	87-172	173-529	530-885	886-1622	1623-2359
HC-B3TN-4	FK						
HC-B3TN-2	AG	1-59	60-118	119-174	175-231	232-238	
HC-B3TF-7	EX					1-3	4-7
HC-A3VF-7	DS				1	2-20	21-39
HC-B4TN-5	CD	1-94	95-187	188-663	664-1139	1140-1399	1400-1660
HC-B4TN-3	EA	1-169	170-338	339-437	438-537	538-758	759-979
HC-B4MN-5	FL			1-35	36-70	71-238	239-406
HC-B4MP-3	FW					1-15	16-31
HC-B4MP-4	FU					1-3	4-7

HC-B5MP-5	EZ		1				
HC-B5MA-3	HB						
HC-B5MN-3	ES		1				
HC-B5MP-3	EV	1-51	52-101	102-223	224-345	346-478	479-612

	Replacement is due by end of:	**March 2000**	**Sept. 2000**	**March 2001**	**Sept. 2001**	**March 2002**	**Sept. 2002**
Hub Model Number	**S/N Series**						
HC-B5MP-3	FT			1-3	4-6		
HC-B3TN-3	BU	4674-5707	5708-6742	6743-7864	7865-8987	8988-10409	10410-11832
HC-B3MN-3	GB						
HC-B3MN-5	FZ						
HC-B3TN-5	BV	2360-2689	2690-3020	3021-3410	3411-3600	3601-4035	4036-4270
HC-B3TN-4	FK			1	2-3		
HC-B3TN-2	AG				239-244	245-295	296-351
HC-B3TF-7	EX	8-47	48-87	88-112	113-136	137-138	139-140
HC-A3VF-7	DS	40-109	110-179	180-230	231-280	281-313	314-345
HC-B4TN-5	CD	1661-1848	1849-2036	2037-2133	2134-2230	2231-3134	3135-3342
HC-B4TN-3	EA	980-1003	1004-1028	1029-1036	1037-1043	1044-1092	1093-1142
HC-B4MN-5	FL	407-411	412-416	417-423	424-429	430-436	437-1002
HC-B4MP-3	FW	32-371	372-711	712-1024	1025-1338	1339-1393	1394-3033
HC-B4MP-4	FU		8				
HC-B5MP-5	EZ	2	3-4			5-6	7-8
HC-B5MA-3	HB	1	2-3	4-28	29-52	53-78	79-1018
HC-B5MN-3	ES	2-7	8-13				
HC-B5MP-3	EV	613-720	721-826	827-894	895-961	962-1002	1003-2030
HC-B5MP-3	FT	7			8		

	Replacement is due by end of:	**March 2003**	**Sept. 2003**	**March 2004**	**Sept. 2004**	**March 2005**	**Sept. 2005**
Hub Model Number	**S/N Series**						
HC-B3TN-3	BU	11833-13487	13488-15141	15142-16299	16300-17457	17458-18308	18309-19160
HC-B3MN-3	GB			1-162	163-324	325-361	362-438
HC-B3MN-5	FZ			1-23	24-45	46	
HC-B3TN-5	BV	4271-4523	4524-4776	4777-4809	4810-4843	4844-4945	4946-6022
HC-B3TN-4	FK						4
HC-B3TN-2	AG	352-447	448-543	544-682	683-821	822-886	887-950
HC-B3TF-7	EX	141-208	209-275	276-330	331-386	387-472	473-558
HC-A3VF-7	DS	346-396	397-446	447-454	455-482	483-496	497-511
HC-B4TN-5	CD						
HC-B4TN-3	EA						
HC-B4MN-5	FL						
HC-B4MP-3	FW						
HC-B4MP-4	FU						
HC-B5MP-5	EZ						
HC-B5MA-3	HB						
HC-B5MN-3	ES						
HC-B5MP-3	EV						
HC-B5MP-3	FT						

Effective Date: 25 October 1996

DCA/ HARTZ/139A Blades - Rework and Inspection

Applicability: Model ( )HC-( )(2,3)(X,V)( )-( ) series and HA-A2V20-1B series propellers with aluminium blades. These propellers are installed on but not limited to the following aircraft:

Twin Commander: 500, 500A, 500S, 680F
Beech: 35 series, 35-C33A, 58P, 95-A55, 95-B55
Bellanca: 7GCA, 7GCB, 7GCC
Cessna: 170; 170A, 172, 175, 180 series, 182 series, 210 series, 310 series, E310H, 320, 320-1, 320A, 320B, 402, 411
deHavilland: DH104, DH114
GAF: N22B, N24A, N22S, N22C
Grumman: G44, G44A
Mooney: M20
Pacific Aerospace: FU-24, FU-24A
Pilatus: PC-3, PC-6, PC-6-H1, -H2
Piper: PA-E23-250, PA14, PA18(A)(S)-150, PA18A-150, PA22-150, PA22S-150, PA23 series, PA24 series, PA28, PA28-140
SOCATA: GY.80-150, GY.80-160

Requirement: To prevent blade separation due to cracked blades, hubs, or blade clamps, which could result in loss of control of the aircraft, accomplish the following:-

A. For hub models ( )HC-(1,4,5,8)(2,3)(X,V)( )-( ) perform initial and repetitive inspections and, if necessary, replace with serviceable parts per Hartzell SB HC-SB-61-217, Revision 1, as follows:

1. Initially perform a fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, a dye penetrant inspection of the blade internal bearing bore, and a visual and magnetic particle inspection of the blade clamp and of the hub. The initial inspection is required within the following:

(i) 1,000 hours time since new (TSN) for propellers with less than 900 hours TSN, provided that the initial inspections are performed within 60 months TSN or within next 24 months, whichever occurs later, or

(ii) 100 hours TIS for propellers with 900 or more hours TSN, or unknown TSN, provided that the initial inspections are performed within 24 months.

2. Thereafter, perform repetitive fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, and a visual and magnetic particle inspection of the blade clamp. The repetitive inspection is required at intervals not to exceed 500 hours TIS or 60 months, whichever occurs first, since last inspection.

3. Thereafter, perform a repetitive visual and magnetic particle inspection of the hub. This repetitive hub inspection is required at intervals not to exceed 250 hours TIS or 60 months, whichever occurs first, since last inspection.

4. Thereafter, perform a repetitive dye penetrant inspection of the blade internal bearing bore. This repetitive blade internal bearing bore inspection is required at intervals not to exceed 60 months since last inspection.

B. For hub models ( )HC-(A,D)(2,3)(X,V)( )-( ), and HA-A2V20-1B, except HC-A3VF-7( ), perform initial and repetitive inspections and, if necessary, replace with serviceable parts per SB HC-SB-61-217, as follows:

1. Initially perform a fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, a visual and magnetic particle inspection of the blade clamp, and a dye penetrant inspection of the blade internal bearing bore. The initial inspection is required within the following:

(i) 1,000 hours TSN for propellers with less than 800 hours TSN, provided that the initial inspections are performed within 60 months TSN or within next 24 months, whichever calendar time occurs later, or

(ii) 200 hours TIS for propellers with 800 or more hours TSN, or unknown TSN, provided that the initial inspections are performed within the next 24 months.

2. Thereafter, perform repetitive fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, and a visual and magnetic particle inspection of the blade clamp. The repetitive inspection is required at intervals not to exceed 500 hours TIS or 60 months, whichever occurs first, since last inspection.

3. Thereafter, perform repetitive dye penetrant inspections of the blade internal bearing bore. This repetitive blade internal bearing bore inspection is required at intervals not to exceed 60 months since last inspection.

C. For hub models HC-A3VF-7( ) perform initial and repetitive inspections and, if necessary, replace with serviceable parts per SB HC-SB-61-217, Revision 1, as follows:

1. Initially perform a fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, a visual and magnetic particle inspection of the blade clamp, and a dye penetrant inspection of the blade internal bearing bore. The initial inspection is required within the following:

(i) 3,000 hours TSN for propellers that have never been overhauled and have less than 2,500 hours TSN on the effective date of this AD, provided that the initial inspections are performed within 60 months TSN or within next 24 months, whichever calendar time occurs later, or

(ii) 3,000 hours TIS since last overhaul for propellers that have been overhauled but have less than 2,500 hours TIS since last overhaul, provided that the initial inspections are performed within 60 months TIS since last overhaul or within next 24 months, whichever calendar time occurs later, or

(iii) 500 hours TIS, for propellers that have never been overhauled and have 2,500 or more hours TSN, or propellers which have been overhauled and have 2,500 or more hours TIS since last overhaul, or propellers with unknown TSN, provided that the initial inspections are performed within next 24 months.

2. Thereafter, perform repetitive fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, and a visual and magnetic particle inspection of the blade clamp. The repetitive inspection is required at intervals not to exceed 3000 hours TIS or 60 months, whichever occurs first, since last inspection.

3. Thereafter, perform repetitive dye penetrant inspections of the blade internal bearing bore. This repetitive blade internal bearing bore inspection is required at intervals not to exceed 60 months since last inspection.

D. The initial inspection of the internal blade bearing bore required by paragraphs A.1, B.1, or C.1 of this AD need not be accomplished again if previously accomplished per page 4 of SB HC-SB-61-217, Revision 1.

E. If not previously accomplished, shot peen the propeller blade shank area during the initial inspection required by paragraphs A.1, B.1, or C.1, as applicable, and perform the shot peening per SB HC-SB-61-217, Revision 1. Re-shot peening of the propeller blade shank area during the repetitive inspections required by paragraphs A.2, B.2, or C.2 as applicable, is required only if the propeller blade shank area has been repaired or has excessive wear or damage per SB HC-SB-61-217, Revision 1.

F. Replacement of affected propellers or modification tio Hartzell model “MV” series propellers constitutes terminating action for the intitial and repetitive inspections specified in paragraphs A. through E, of this AD. Hartzelll “MV” series propellers were certified as models ()HC-()(2,3)MV()-() and HA-A2MV20-1. Information on modifying the affected propellers may be found in Hartzell SB No’s HC-SB-61-232 and HC-SB-61-233.

(FAA AD 97-18-02R1 refers)

Compliance: Compliance is required at the times specified within the requirement of this airworthiness directive

Effective Date: DCA/HARTZ/139 26 September 1997
DCA/HARTZ/139A 25 September 2003

DCA/HARTZ/140 BASCO Overhauled Propellers - Maintenance Actions

Applicability: Propellers overhauled by Brothers Aero Service Company Inc (BASCO), USA, from November 1996 to October 1998. Propellers affected are Y–shank series propellers and those listed by hub S/N in FAA airworthiness directive 2001-07-03.

Requirement: To prevent failure of the propellers returned to service by BASCO, accomplish the following:-

1) Disassemble,

2) Clean,

3) Inspect for the following:
(i) Nicks,
(ii) Scratches,
(iii) Failure of blades to meet minimum dimensions,
(iv) Alodine or paint or both applied over corrosion,
(v) Lack of chemical conversion coating applied beneath the de-ice boots,
(vi) Bolts incorrectly torqued,
(vii) Incorrect parts,
(viii) Incorrect installation of parts, and
(ix) Reinstallation of parts intended for one-time use.

4) Repair and replace with serviceable parts, as necessary,

5) Perform a cold roll operation on the blade shanks,

6) Reassemble and test.

Note: Information on performing an overhaul of the affected propellers may be found in the applicable Hartzell Propeller Overhaul Manual.

(FAA AD 2001-07-03 refers)

Compliance: Within next 10 hours TIS.

Effective Date: 31 May 2001

DCA/HARTZ/141A HC-C2YR-4CF Propeller – Service Life Reduction

Applicability: Model HC-C2YR-4CF propellers with hubs P/N D-6522-1 or D-2201-16 and propeller blades P/N FC8477A-4 fitted to Sky International Inc (Pitts) S-2S and S-2B aircraft with Textron Lycoming model AEIO-540-D4A5 engines.

Note 1: This AD revised to add note 2 which specifies the relevent manufacturer instructions which pertains to the subject of this AD.

Requirement: To prevent fatigue failure of propeller hubs which may result in loss of the aircraft, accomplish the following:

1. Remove hubs P/N D-6522-1 or D-2201-16 and blades P/N FC8477A-4 from service before exceeding 2000 flight hours and replace with serviceable hubs and blades before further flight.

2. Affected hubs and propeller blades that have accumulated 2000 hours TIS shall not be fitted to any aircraft.

3. Affected hubs and propeller blades that have been removed from a Sky International Inc (Pitts) S-2S or S-2B aircraft shall not be reused on any other aircraft.

Note 2: The Pitts S-2S and S-2B propeller blade and hub unit life limits specified in the airworthiness limitations section of Hartzell Propeller Maintenance Manual 113B and the propeller application data for the Aviat (Pitts) S-2S and S-2B aircraft specified in Hartzell Application Guide 159 pertains to the subject of this AD.

(FAA AD 2003-03-20 refers)

Compliance: 1. By 2000 hours TTIS.

2. From 30 October 2008.

3. From 30 October 2008.

Effective Date: DCA/HARTZ/141 - 27 February 2003
DCA/HARTZ/141A - 30 October 2008

DCA/HARTZ/142 Two Bladed Aluminium Hubs - Replacement

Applicability: Model ( )HC-( )2Y( )-( ) propellers, with propeller hub P/N D-6522-1, D-6522-2, D-6529-1, and D-6559-3, and the S/N listed in the following table :

Table 1:

Propeller S/N	Hub S/N	Hub P/N
AU11115B	A61365B	D-6522-1
AU11116B	A61366B	D-6522-1
AU11117B	A61367B	D-6522-1
AU11119B	A61369B	D-6522-1
AU11125B	A61375B	D-6522-1
AU11131B	A61381B	D-6522-1
AU11134B	A61384B	D-6522-1
AU11135B	A61385B	D-6522-1
AY515B	A61397B	D-6522-2
AY516B	A61398B	D-6522-2
CH36140B	A61409B	D-6529-1
CH36141B	A61410B	D-6529-1
CH36151B	A61420B	D-6529-1
CH36152B	A61421B	D-6529-1

CH36153B	A61422B	D-6529-1
CH36157B	A61427B	D-6529-1
EU376B	A61443B	D-6559-3
CH36172B	A61547B	D-6529-1
CH36159B	A61553B	D-6529-1
CH36160B	A61554B	D-6529-1
CH36162B	A61556B	D-6529-1
CH36163B	A61557B	D-6529-1
CH36165B	A61560B	D-6529-1
CH36188B	A61563B	D-6529-1
CH36193B	A61568B	D-6529-1
CH36194B	A61569B	D-6529-1
CH36195B	A61570B	D-6529-1
CH36196B	A61571B	D-6529-1
CH36178B	A61573B	D-6529-1
CH36179B	A61574B	D-6529-1
CH36181B	A61576B	D-6529-1
CH36182B	A61577B	D-6529-1
CH36183B	A61578B	D-6529-1
CH36198B	A61583B	D-6529-1
CH36199B	A61584B	D-6529-1
CH36200B	A61585B	D-6529-1
CH36201B	A61586B	D-6529-1
CH36202B	A61587B	D-6529-1
CH36203B	A61588B	D-6529-1
CH36204B	A61589B	D-6529-1
CH36205B	A61590B	D-6529-1
CH36209B	A61594B	D-6529-1
Propeller S/N	**Hub S/N**	**Hub P/N**
CH36211B	A61596B	D-6529-1
CH36212B	A61597B	D-6529-1
CH36213B	A61598B	D-6529-1
CH36215B	A61601B	D-6529-1
CH36216B	A61602B	D-6529-1
AU11145B	A61603B	D-6522-1
AU11147B	A61605B	D-6522-1
AU11155B	A61613B	D-6522-1
AY520B	A61743B	D-6522-2
AU11175B	A61893B	D-6522-1

Requirement: To prevent in-flight propeller blade separation resulting in airframe and engine damage, and possible loss of the aircraft, accomplish the following:

1. For Piper PA-32( ) series craft with Lycoming 540 series engines rated at 300 horse power or higher, Britten Norman BN-2 series aircraft with Lycoming 540 series engines, aerobatic aircraft, and craft used for agricultural purposes, remove affected hubs listed by S/N in Table 1 of this AD and replace with serviceable hubs, in accordance with paragraphs 3.A. through 3.B.(3) of ASB HC-ASB-61-259.

2 For aircraft other than those types listed in paragraph 1 of this AD, remove affected hubs listed by S/N in Table 1 of this AD, and replace with serviceable hubs, in accordance with paragraphs 3.A. through 3.B.(3) of ASB HC-ASB-61- 259.

3. Do not install any propeller assembly that has a hub with a P/N D-6522-1, D-6522-2, D- 6529-1, or D-6559-3, with a S/N listed in Table 1 of this AD.

(FAA AD 2003-01-03 refers)

Compliance: 1. By 50 hours TSN or by 27 February 2004, whichever occurs first.

2. By 100 hours TSN or by 27 February 2004, whichever occurs first.

3. After the effective date of this AD.

Effective Date: 27 February 2003

DCA/HARTZ/143 Anti Ice Boots – Removal and Inspection

Applicability: Model HC-C2Y(K,R)-1BF/F8477-4 propellers with TKS (Aircraft De-icing) Ltd. anti-ice boots that were installed by Socata-Groupe Aerospatiale, using TKS Ltd. Procedure P232, Specification for the Attachment of Propeller Overshoes. These propellers were installed on but may not be limited to, Socata TB-20 and TB-21 aircraft

Requirement: To prevent propeller blade separation, damage to the aircraft, and possible loss of the aircraft, do the following:

1. For propellers that have been overhauled after the installation of TKS (Aircraft De-icing) Ltd. Anti-ice boots, and have had the anti-ice boots re-installed using Hartzell Manual 133C (ATA 61-13-33) "Aluminum Blade Overhaul", AS&T Procedure 4700INS, or other approved procedures (excluding TKS Procedure P232) no further action is required.

2. For propellers that have had the anti-ice boots installed using the TKS Procedure P232, but have not had anti-ice boots re- installed using Hartzell Manual 133C (ATA 61-13-33) "Aluminum Blade Overhaul", AS&T Procedure 4700INS, or other approved procedures (excluding TKS Procedure P232), remove anti-ice boots, inspect and rework anti-ice boot areas of propeller blades, and install new anti-ice boots in accordance with paragraph 3 of the Accomplishment Instructions of Hartzell Propeller Inc. ASB HC-ASB-61-251, dated April 10, 2001 using the compliance schedule as follows:

(FAA AD 2002-06-02 refers)

Compliance:

Propeller TIS	Inspection
Fewer than 500 hours TIS and less than 3 years time-since-new (TSN).	Within 200 hours TIS but not to exceed 600 hours TSN, or prior to accumulating 4 years TSN, whichever occurs first.
Greater than 500 hours TIS, or 3 years or more TSN but less than 6 years TSN	Within 100 hours TIS, or 1 year from the effective date of this AD, whichever occurs first
Six years or more TSN	Within 50 hours TIS, or within 6 months from the effective date of this AD, whichever occurs first.

Effective Date: 24 April 2003

DCA/HARTZ/144 Australian Air Props – Removal from Service

Applicability: Hartzell 2 bladed 'Y' shank aluminium hub propellers ()HC-()2Y-() and Hartzell 2 bladed 'Y' shank aluminium hubs last released by Australian Air Props Pty Ltd, Building 515, Hartzell Place, Bankstown Airport NSW, in the period 1 January 1991 through 31 December 1996 and those propellers listed in table 1.

Requirement: Due to incorrect overhaul practices which may lead to failure of the propeller hub and loss of control of the aircraft, remove from service;

1. Any Hartzell ()HC-()2Y()-() propeller incorporating a hub last released by Australian Air Props PTY Ltd following a propeller strike, in the period 1 January 1991 through 31 December 1996, and;
2. Propeller Hubs listed in table 1 of this directive.

For propellers removed IAW with requirement 1, dismantle the propeller and inspect the hub preload plate shelf area for evidence of a machining repair. Remove from service any propeller hub found to have machining of the preload plate shelf contrary to Hartzell Standard Practices Manual 202A.

For propellers listed in table 1 of this directive, remove hub from service and scrap IAW the manufacturer's procedures.

Report any propellers removed from service IAW the requirements of this AD to Team Leader Continuing Airworthiness, Aircraft Certification Unit, CAA.

(CASA AD AD/PHZL/77 refers)

Compliance: Within 50 Hours TIS or 31 October 2003 whichever occurs first.

Effective Date: 31 August 2003

Table 1:

Model	**Serial Number**
HC-F2YL-1	EU211
HC-E2YL-2	BG2664
HC-E2YL-2	BG2721
HC-E2YL-2	DP3940
HC-E2YL-2	BG3628
HC-M2YR-1	EN359
HC-M2YR-1	FB818
HC-M2YR-1	FB394
HC-C2YF-2	AM3316
HC-C2YF-2	AM3088

DCA/HARTZ/145 T & W Propellers Inc - Overhaul

Applicability: All Hartzell Propellers that were overhauled by T&W Propellers Inc, of Chino California and are listed in Table 1 of FAA AD 2003-13-17

Requirement: Following an NTSB investigation the FAA determined that T & W Propellers were not properly carrying out propeller repairs and overhauls. The investigation revealed that overhaul processes had not been carried out rendering the propellers unserviceable. To avoid failure of the propeller and loss of control of the aircraft:

Remove propellers from service and return to an authorised propeller repair centre other than T & W Propellers for disassembly and re-inspection.

(FAA AD 2003-13-17 refers)

Compliance: Within 10 hours TIS

Effective Date: 31 August 2003

DCA/HARTZ/146B Blade Pitch Change Knobs – Inspection and Rework

Applicability: Model ( )HC-( )( )Y( )-( )( )( ) propellers with 'Y' shank aluminium blades having an 'F' pitch change knob, fitted to Textron Lycoming IO-720 series engines installed on FU24 series aircraft.

Note 1: This AD revised to mandate the shot peening of pitch change knobs of new or first life blades that have not been shotpeened at manufacture or in accordance with previous revisions of this AD or DCA/HARTZ/135. Pitch change knobs shall also be shotpeened at every overhaul, or when damage, wear or rework exceeds the depth of the pebble grain surface.

Note 2: Propellers with aluminium blades having an 'F' pitch change knob can be identified by prefix letter 'F' before the blade model number. Propeller blades with a S/N higher than J88010 may have been shot peened at manufacture. After several occurrences of pitch change knob fractures, Hartzell introduced the shotpeening of pitch change knobs at manufacture from 1 December 2005. (refer Hartzell Service Letter No. HC-SL-61-245).

Requirement: To prevent failure of a blade pitch change knob possibly resulting in loss of aircraft control, accomplish the following:

1. Inspect, rework and shotpeen pitch change knobs per the instructions in Hartzell Alert Service Bulletin (ASB) No. HC-ASB-61-263, revision 2 and per the instructions in the blade shank overhaul chapter of Hartzell Aluminum Overhaul Manual No. 133C (61-13-33).

2. Before fitting a propeller blade, ensure the pitch change knob has been shotpeened per requirement 1 of this AD.

Note 3: This AD amplifies the shotpeening requirements specified in ASB No. HC-ASB-61-263 and Hartzell Aluminum Overhaul Manual No. 133C (61-13-33). In 2003 Hartzell introduced the shotpeening of the pitch change knobs at every overhaul. Shotpeening applies a compressive layer improving the resistance to fatigue which can be compromised by damage, in service loads, rework or wear.

(NZ Occurrence 07/2080 refers)

Compliance: 1. At the next calendar inspection, or next 100 hours TIS whichever occurs sooner, unless previously accomplished at manufacture or last propeller overhaul whichever is the later, and thereafter at every propeller overhaul, or when the damage, wear or rework on the pitch change knob exceeds the depth of the pebble grain surface.

2. From 29 November 2007

Effective Date: DCA/HARTZ/146 - 25 September 2003
DCA/HARTZ/146A - 25 September 2003
DCA/HARTZ/146B - 29 November 2007

DCA/HARTZ/147 Propeller Blades - Replacement

Applicability: Model HC-B3TN-5( ) propellers, with part numbers (P/N's) T10176H(B)-5, T10176H(K)-5, T10176H-5, T10178H-11, T10178H-11R, T10178H(B)-11, and T10178H(B)-11R blades, that are installed on Mitsubishi MU-2 aircraft.

Note 1: These blades may be fitted to other aircraft types including Rockwell 690A and Cessna 441, however the propeller state of design authority advises failures to date have been limited to the MU-2. Compliance with the SB is recommended for other aircraft types.

Note 2: The parentheses indicate the presence or absence of an additional letter(s) which vary the basic propeller blade model designation. This AD still applies regardless of whether these letters are present or absent on the propeller blade model designation.

Requirement: 1. To prevent propeller blade separation, damage to the aircraft, and possible loss of the aircraft, remove and replace propeller blades in accordance with paragraphs 3.A. through 3.C.(3) of the Accomplishment Instructions in Hartzell SB HC-SB-61-250.

2. After the effective date of this AD, do not install any propeller blade removed in accordance with Hartzell SB HC-SB-61-250, on any aircraft.

(FAA AD 2003-04-23 refers)

Compliance: Within 200 TIS or before 31 March 2006.

Effective Date: 31 March 2005

DCA/HARTZ/148 Blade Pilot Tube Bore - Inspection

Applicability: All model HC-B3TN-5( )/T10282( ) propellers installed on Fairchild aircraft models SA226-TC, SA226-AT and SA226-T with Garrett TPE331- 10UA-511G engines, and excluding propellers with blades P/N T10282N( ), T10282NB( ), T10282NK( ), or T10282NE( ).

Note 1: Aircraft incorporating STCs SA344GL-D, SA4872SW, and SA345GL-D have these engine, propeller, and aircraft combinations.

Requirement: To prevent possible blade failure near the hub which can result in blade separation, engine separation, damage to the aircraft, and possible loss of the aircraft, accomplish the following:

1. Perform a document search to determine that the propeller blades meet the initial and repetitive compliance requirements of AD 88-24-15.

2. Perform a document search to determine that propeller blades P/N T10282( ) have been replaced with P/N T10282N( ), T10282NB( ), T10282NK( ), or T10282NE( ) propeller blades.

3. If the actions in requirement 1 and 2 have not been done, then do one of the following:

a) Inspect the blades per Hartzell SB 136, revision "I", or
b) Replace propeller blades with P/N T10282N( ), T10282NB( ),T10282NK( ) or T10282NE( ) as applicable.

4. If the actions in requirement 1 have been done, but not the actions in requirement 2, then inspect the blades per Hartzell SB 136, revision "I". Replace all blades showing evidence of cracks or other unairworthy conditions, before further flight.

Note 2: After the effective date of this AD, compliance is restricted to SB No. 136, revision "I". Installation of propeller blades, P/N T10282N( ), T10282NB( ), T10282NK( ), or T10282NE( ) as applicable, onto a Hartzell Propeller Inc. model HC-B3TN-5( ) propeller, constitutes terminating action to the inspections, repairs, and replacements specified in requirements 3 and 4.

(FAA AD 2005-04-08 refers)

Compliance: 1. Within 50 hours TIS.
2. Within 50 hours TIS.

3. Inspect or replace within 500 hours TSN or TSO, or before 31 March 2007, whichever occurs first, and thereafter within 500 TIS intervals.

4. Within 500 hours since the last Hartzell SB 136 inspection, and thereafter within 500 TIS intervals.

Effective Date: 31 March 2005

DCA/HARTZ/149 Propeller Blades – Inspection and Overhaul

Applicability: Hartzell Propellers listed in the following table and which have last been returned to service by Southern California Propeller Service of Inglewood, CA.

Hartzell Propeller, Inc.
()HC–()(2,3,4)Y()–().
()HC–()(2,3,4)(X,V,MV,W,Z,P,R) (F,G,L,K,R,20,30,31)–().
()HA–()–().
HC–B(3,4)(M,P,R,T)(A,N,P)–().
HC–(D,E)(4,5)(A,B,N,P)–().

Note 1: For Hartzell propeller models listed in this table, any letter or number (or lack of a letter or number or any combination of letters or numbers) could appear where open parentheses are shown in the model number.

Note 2: No further action is required for propeller models listed in this table that have last been serviced, repaired or overhauled by a manufacturer approved service center **other than** Southern California Propeller Service.

Requirement: To prevent blade failure that could result in separation of a propeller blades and loss of control of the aircraft, disassemble and clean the propeller and inspect per the applicable propeller manufacturer's service documentation for the following:

Cracks, corrosion or pits, nicks, scratches, blade minimum dimensions, unapproved localized heating of blade, unapproved use of helicoil inserts in actuating pin holes, improperly drilled actuating pin holes, chemical conversion coat or paint or both applied over corrosion, lack of chemical conversion coating, lack of paint on internal surfaces, bolts incorrectly torqued, incorrect parts, incorrect installation of parts, reinstallation of parts intended for one-time use, and lack of proper shot peening.

Repair and replace with serviceable parts as required, and reassemble and test per the applicable propeller manufacturer's service documentation.

(FAA AD 2005-14-11 refers)

Compliance: Within the next 28 days.

Effective Date: 25 August 2005

DCA/HARTZ/150 Attachment Bolts – Inspection and Replacement

Applicability: All model HC-B3TN-2, HC-B3TN-3, HC-B3TN-5, HC-B3MN-3, HC-B4TN-3, HC-B4TN-5, HC-B4MN-5, HC-B4MP-3, HC-B4MP-5 and HC-B5MP-3 propellers installed with propeller mounting bolts P/N B-3339.

Requirement: To prevent propeller mounting bolt failures or improperly secured propellers, which could lead to separation of the propeller from the aircraft, accomplish the following:

1. If P/N B-3339 bolts from LFC manufacturing Lot No. 12 or Lot No. 56 are fitted, visually inspect and torque check of all eight mounting flange bolts per the instructions in paragraphs 3.A through to 3.B.(5) of Hartzell Propeller Inc. Alert Service Bulletin No. HC-ASB-61-279, revision 2 and Alert Service Bulletin Appendix No. HC-ASBA- 61-279, revision 2. If the attachment bolts are not from the affected batch no further action is required.

If any bolt fails the torque check, replace all eight bolts with P/N B-3339 bolts that are not from LFC Manufacturing Lot No. 12 or Lot No. 56 or other equivalent manufacturer approved bolts per ASB HC-ASB-61-279.

Note 1: For the location of bolt identification marks refer to figure 1 in ASB HC-ASB-61-279.

2. Replace all LFC Manufacturing Lot No. 12 and Lot No. 56 bolts P/N B-3339, with bolts P/N B-3339 that are not from LFC Manufacturing Lot No. 12 or Lot No. 56 or other equivalent manufacturer approved bolts, per the instructions in paragraph 3.C of ASB HC-ASB-61-279.

Note 2: Accomlishment of requirement 2 is a terminating action to the requirements of this AD.

(FAA AD 2005-14-12 refers)

Compliance: 1. Within 50 hours TIS or by 29 September 2006, whichever occurs first, and thereafter torque check of all eight mounting flange bolts at intervals not to exceed 100 hour TIS.

2. By 29 September 2006.

Effective Date: 29 September 2005

DCA/HARTZ/151 Goodrich 'FASTprop' De-icers – Inspection and Replacement

Applicability: Goodrich De-icing and Specialty Systems "FASTprop" propeller de-icers, P/Ns P4E1188 series, P4E1601 series, P4E2200 series, P4E2271-10, P4E2575-7, P4E2575-10, P4E2598-10, P5855BSW, P6199SW, P6592SW, P6662SW and P6975-11.

These propeller de-icers are installed on, but not limited to, the aircraft listed in table 1 of FAA AD 2005-18-20.

Requirement: To prevent propeller de-icers from detaching from the propeller blade, resulting in damage to the aircraft, and possible injury to passengers and crewmembers, accomplish the following:

1. Inspect propeller de-icers per the accomplishment instructions in paragraphs 2.A(3) through to (5) of Goodrich De-icing and Specialty Systems Alert Service Bulletin (ASB) No. 30-60-00-1. Repair or replace as required before further flight.

2. Inspect propeller de-icers per the 'Pre-flight Walkaround Visual Check' in paragraph 2.A(2) of ASB No. 30- 60-00-1. Repair or replace as required before further flight, per the accomplishment instructions in paragraphs 2.A(3) through to (5) of ASB No. 30-60-00-1.

(FAA AD 2005-18-20 refers)

Note 1: Certificated maintenance personnel must perform the initial inspection per requirement 1. Thereafter the pilot may perform the repetitive visual inspection per requirement 2 in accordance with CAR Part 43, Appendix A. The pilot must be trained and authorised (Part 43, Subpart B refers) and certification must be provided (Part 43, Subpart C refers).

Note 2: The replacement of "FASTprop" propeller de-icers with a manufacturer approved propeller de-icer, per ASB No. 30- 60-00-1 is a terminating action to this AD.

Compliance: 1. Within the next 10 hours TIS.

2. Once per day at the first daily preflight inspection.

Effective Date: 27 October 2005

DCA/HARTZ/152 Propeller Hubs – Inspection and Repair

Applicability: Hartzell propeller assemblies with hub model series specified in the following table:

HC–92W Hub Model Series	HC–B3R Hub Model Series
BHC–92W Hub Model Series	HC–B3W Hub Model Series
HC–92Z Hub Model Series	BHC–B3W Hub Model Series
BHC–92Z Hub Model Series	HA–B3Z Hub Model Series
HC–B3P Hub Model Series	HC–B3Z Hub Model Series

These propellers assemblies are installed on, but not limited to, Beech 18 and 35 series aircraft, Cessna 172, 175, 175A, 190, 195, 195A, 195B, 421 and 421A aircraft, Pacific Aerospace Fletcher FU-24 and FU-24A aircraft, and Piper PA-23, PA-24 and PA-25 aircraft.

Requirement: To detect corrosion and mechanical damage that can cause failure of a propeller, which could result in loss of control of the aircraft, inspect and rework the propeller blade bore and balance hole, per the accomplishment instructions in paragraph 3.A, of Hartzell Service Bulletin No. HC-SB-61-136, revision I and the applicable Hartzell Blade Overhaul Manual.

(FAA AD 2005-18-12 refers)

Note 1: Refer to the applicable Hartzell maintenance manuals for information on inspecting the propeller components for cracks, corrosion or pits, nicks, scratches, wear, blade minimum dimensions, and damage in the blade balance bore.

Note 2: Actions accomplished per Hartzell Service Bulletin No. HC-SB-61-136, revision G or H are acceptable.

Note 3: Propellers are to be inspected per Advisory Circular AC43-5A and CAR Part 43 Appendix C every 4 years.

Note 4: Propellers are to be overhauled at the TBO recommended by the manufacturer in terms of operating hours, per Advisory Circular AC43-5A.

Compliance: For propellers with more than 10 years TSO by 27 October 2008 (36 months).

For propellers with more than 15 years TSO by 27 April 2008 (24 months).

For propellers with more than 20 years TSO by 27 October 2007 (18 months).

For propellers with more than 25 years TSO, or if the TSO is unknown, by 27 April 2007 (12 months).

Effective Date: 27 April 2006

DCA/HARTZ/153 Cancelled – DCA/HARTZ/159 refers

Effective Date: 26 November 2009

DCA/HARTZ/154 Propeller Mounting Bolts Torque - Inspection

Applicability: Model HC-B5MP-3( )/M10282A( )+6 and HC-B5MP-3( )/M10876( )( )( )( ) five-bladed propellers.

Note 1: The parentheses appearing in the propeller model number indicates the presence or absence of an additional letter(s) that varies the basic propeller model. This AD still applies regardless of whether these letters are present or absent in the propeller model designation.

Requirement: To prevent propeller separation due to the possibility of fretting wear occuring between the engine and propeller mounting flanges causing a loss of mounting bolt preload and failure of the bolts, accomplish the following:

1. If either of the propeller or engine mounting flanges have not been resurfaced per either Hartzell Propeller Inc. Alert Service Bulletin (SB) No. A203A, dated January 5, 1995, or SB No. HC-SB-61-275, dated June 2, 2005 perform a torque inspection of the propeller mounting bolts, per the instructions in paragraphs 3.A. through 3.A.(4) of Hartzell Propeller Inc. SB No. HC-SB-61-275.

If the torque of any bolt is found to be less than 90 ft-lbs, remove and inspect the propeller, resurface the flanges as required, and replace all mounting bolts per the instructions in paragraphs 3.B. through 3.B.(5) of SB No. HC-SB-61-275.

2. If the propeller and engine mounting flanges have been resurfaced per either SB No. A203A or SB No. HC-SB-61-275 and a fretting disk was not installed, perform a torque inspection of the propeller mounting bolts per the instructions in paragraphs 3.A. through 3.A.(4) of Hartzell Propeller Inc. SB No. HC-SB-61-275.

If the torque of any bolt is found to be less than 90 ft-lbs, remove and inspect the propeller, resurface the flanges as required, and replace all mounting bolts per the instructions in paragraphs 3.B. through 3.B.(5) of SB No. HC-SB-61-275.

3. If the propeller and engine mounting flanges have been resurfaced, per either SB No. A203A or SB No. HC-SB-61-275, and a fretting disk was installed, remove the propeller and inspect the propeller and engine mounting flanges. Resurface the flanges if necessary and replace the fretting disk. Replace all mounting bolts with new mounting bolts.

Accomplish the inspection and resurfacing per the instructions in paragraphs 3.B. through 3.B.(5) of SB No. HC-SB-61-275.

(FAA AD 2006-22-12 refers)

Note 2: Whenever a propeller is removed from an engine for any reason, or before being fitted to an aircraft model that is not listed in this AD, inspect the propeller and engine mounting flanges and resurface the flanges, if required, and replace all mounting bolts per the instructions in paragraphs 3.B. through 3.B.(5) of SB No. HC-SB-61-275.

Compliance: 1. For propellers with 3000 or more hours TSN:

If the bolt torque inspection has never been done, accomplish a propeller mounting bolts torque inspection, before further flight, or

Within 120 hours TIS since last inspected per FAA AD 2004-21-01, or within the next 120 hours TIS, whichever occurs sooner, unless already accomplished, and

Thereafter at intervals not to exceed 120 hours TIS.

For propellers with less than 3000 hours TSN:

Within 3000 hours TSN and thereafter at intervals not to exceed 120 hours TIS.

2. Within the next 120 hours TIS for flanges that were resurfaced 1500 hours ago and thereafter at intervals not to exceed 120 hours TIS.

3. Within the next 120 hours TIS for flanges that were resurfaced 1500 hours ago and thereafter at intervals not to exceed 1500 hours TIS.

Effective Date: 30 November 2006

DCA/HARTZ/155 Propeller Maintenance – Inspection and Rework

Applicability: Hartzell propellers which have been serviced by Oxford Aviation Limited in the United Kingdom (trading as CSE Aviation) before November 2003.

Note 1: For a list of affected propeller P/Ns and S/Ns refer to table 1 in FAA AD 2006-24-07.

Requirement: To detect and correct inspections and repairs that might not have been accomplished, and which if left uncorrected could result in the propeller blade separating from the hub and cause loss of aircraft control, accomplish the following:

Determine if the propeller has been serviced, repaired or overhauled by Oxford Aviation Limited (trading as CSE Aviation) before November 2003.

If not, no further action is required.

If the propeller has been serviced, repaired or overhauled by Oxford Aviation Limited (trading as CSE Aviation), before November 2003 contact the Aircraft Certification Unit for further instruction at:

Civil Aviation Authority
P O Box 31-441
LOWER HUTT
Attention: Team Leader - Continuing Airworthiness

(FAA AD 2006-24-07 refers)

Note 2: If the propeller has been overhauled by another approved propeller repair facility after October 2003, no further action is required.

Note 3: A copy of FAA AD 2006-24-07 is may be obtained from http://www.airweb.faa.gov/Regulatory_and_Guidance_Library

Compliance: Within the next 50 hours TIS or by 21 February 2007, whichever is the sooner.

Effective Date: 21 December 2006

DCA/HARTZ/156 Propeller Blade Shank – Inspection and Rework

Applicability: Model ( )HC-( )( )Y( )-( )( )( ) compact series constant speed or feathering propellers fitted with Hartzell manufactured "Y" shank aluminum blades.

These propellers are installed on, but not limited to Aermacchi S.pA. (formerly Siai-Marchetti) S-208 aircraft, Aero Commander 200B and 200D aircraft, Aerostar 600 aircraft, Beech 24, 35, 36, 45, 55, 56TC, 58, 60, and 95 aircraft, Bellanca 14 and 17 series aircraft, Cessna 182 and 188 aircraft, Embraer EMB-200A aircraft, Maule M5 aircraft, Mooney M20 and M22 aircraft, Pilatus Britten Norman or Britten Norman BN-2, BN-2A, and BN-2A-6 aircraft, Piper PA-23, PA-24, PA-28, PA-30, PA-31, PA-32, PA-34, PA-36, and PA-39 aircraft, Pitts S-1T and S-2A aircraft and Rockwell 112, 114, 200, 500, and 685 series aircraft.

Note 1: The parentheses appearing in the propeller model number indicates the presence or absence of an additional letter(s) that varies the basic propeller model. This AD applies regardless of whether these letters are present or absent in the propeller model designation.

Note 2: Propellers are considered in compliance with the inspection and rework requirements of this AD if all the blades have a S/N D47534 onwards, or if all the blades are identified with the letters "PR" or "R" which is ink-stamped on the camber side, or if the letters "RD" are metal-stamped on the blade butt.

Note 3: This AD supersedes FAA AD 2002-09-08 and no further action is required for propellers in compliance with FAA AD 77-12-06R2.

Requirement: To prevent failure of the propeller blade due to the possibility of fatigue cracks in the aluminium blade shank radius, which could result in damage to the aircraft and loss of aircraft control, accomplish the following:

1. For model ( )HC-( )( )Y( ) compact series "Y" shank propellers that have not been inspected and reworked in accordance with FAA AD 77-12-06R2, remove and inspect blades per the instructions in Hartzell Service Bulletin (SB) No. 118A. Rework or replace blades as required before further flight.

Note 4: Hartzell SB No. 118A requires the cold rolling of the propeller blade shank. Cold rolling is a critical requirement in the prevention of cracks in the blade. Any rework in the blade shank area will necessitate the cold rolling of the blade shank area, apart from the one-time cold rolling requirement of this AD.

2. Instrument panel modifications on aircraft fitted with propeller models ( )HC-C2YK-( )( )( )/( )( )7666A-( ), installed on (undampened) 200 hp or more Lycoming IO-360 series engines, that have not been modified per FAA AD 77-12-06R2:

For standard category aircraft re-mark the engine tachometer face or bezel with a red arc restricting the engine speed range between 2,000 and 2,350 rpm, and remove the present vibration placard and affix a new placard near the engine tachometer that states:

"Avoid continuous operation between 2,000 and 2,350 rpm."

For acrobatic aircraft, re-mark the engine tachometer face or bezel with a red arc restricting the engine speed range, i.e., between 2,000 and 2,350 rpm and also between 2,600 and 2,700 rpm (red line), and remove the present vibration placard and affix a new placard near the engine tachometer that states:

"Avoid continuous operation between 2,000 and 2,350 rpm and above 2,600 rpm in acrobatic flight."

Note 5: These propellers are installed on, but are not limited to, Mooney M20E and M20F aircraft, Piper PA-28R-200 aircraft, and Pitts S-1T and S-2A aircraft.

3. For model ( )HC-C2YK-( )( )( )/( )( )8475( )-( ) or ( )( )8477( )-( ) propellers that have not been inspected and reworked in accordance with FAA AD 74-15-02, remove the propeller and modify the pitch change mechanism, and replace the blades with equivalent model blades prefixed with a letter "F" per Hartzell Service Letter No. 69 and Hartzell SB No. 101D. Inspect and repair or replace blades per the instructions in Hartzell SB No. 118A.

(FAA AD 2007-26-09 refers)

Compliance: 1. 2. & 3. By 31 March 2008

Effective Date: 28 February 2008

DCA/HARTZ/157 Propeller Hubs – Inspection and Replacement

Applicability: Lefthand rotating model ( )HC-( )(2,3)Y(K,R)-2 two and three bladed aluminum hub "compact" series propellers, with hubs having a non-suffix S/N and lubrication holes located on the shoulder of the hub blade socket.

These propellers are known to be installed on Lycoming LIO-360 series and LO-360 series engines, fitted to Piper Seneca PA-34-200 aircraft and Seminole PA-44-180 aircraft, and Hawker Beechcraft model 76 Duchess aircraft.

Note 1: The parentheses appearing in the propeller model number indicates the presence or absence of an additional letter(s) that varies the basic propeller model. This AD still applies regardless of whether these letters are present or absent in the propeller model designation.

Requirement: To prevent failure of the propeller hub, which could result in blade separation and loss of aircraft control, accomplish the following:

1. Perform an eddy current inspection of the area around the lubrication holes of the hub blade sockets, per the instructions in paragraphs 3.A through to 3.A(3)(d) of Hartzell Propeller Inc. Alert Service Bulletin (ASB) No. HC-ASB-61-297, revision 1.

If any cracks are found, replace the propeller hub before further flight.

If no cracks are found, mark the propeller per the instructions in paragraph 3.A(5)(a) of ASB No. HC-ASB-61-297.

Note 2: Replacing the non-suffix S/N propeller hub with a propeller hub identified by an "A" or a "B" suffix letter in the propeller hub S/N is a terminating action to the requirements of this AD. Replacement propeller hub P/Ns can be found in paragraph 2.A of ASB No. HC-SB-61-297.

2. Propeller hubs which have have been removed from an affected propeller with a non-suffix S/N or a "E" suffix in the S/N, shall not be fitted to any engine on any aircraft.

(FAA AD 2008-13-28 refers)

Compliance: 1. Within the next 50 hours TIS or by 31 July 2009, whichever occurs sooner, unless previouly accomplished within the last 50 hours TIS, and thereafter at intervals not to exceed 50 hours TIS or 12 months whichever occurs sooner.

2. From 31 July 2008.

Effective Date: 31 July 2008

DCA/HARTZ/158 Counterweight Slug Attach Bolts – Inspection and Replacement

Applicability: The following steel hub turbine propeller models fitted with propeller blade counterweight slug bolts P/N B-3386-14H from LFC manufacturing lot 224:

Model HC-B3TN-5K propellers fitted to AERO COMMANDER 680T, 680V and 681 aircraft
Model HC-B3TN-5DL, -5FL, -5NL propellers fitted to AERO COMMANDER 690(A, B, C) and 695A aircraft
Model HC-A3MVF-7B propellers fitted to AEROSPACE TECHNOLOGIES N22B, N24A, N22S and N22C aircraft
Model HC-A3VF-7, -7B propellers fitted to AEROSPACE TECHNOLOGIES N22B, N24A, N22S and N22C aircraft
Model HC-B5MP-3A, -3C propellers fitted to AIR TRACTOR AT-502A aircraft
Model HC-B5MP-3C propellers fitted to AIR TRACTOR AT-503 and 602 aircraft
Model HC-B5MA-3D(T) propellers fitted to AIR TRACTOR AT-802 aircraft

Model HC-B5MP-3F propellers fitted to AIR TRACTOR AT-802 aircraft
Model HC-B5MA-5A propellers fitted to ANTONOV AN-38 aircraft
Model HC-B3TN-5V propellers fitted to AYRES S-2R aircraft
Model HC-B4TN-5NL, -5PL propellers fitted to AYRES S-2R(-1340), -G(5, 6, 10), -R3S, -R1820, -T(6, 11, 15, 34, 45, 65) aircraft
Model HC-B5MP-3C propellers fitted to AYRES S-2R(HG)-T65 aircraft
Model HC-B3TN-3AE propellers fitted to AYRES S-2R-T( ) aircraft
Model HC-B3TN-5K propellers fitted to BAE (JETSTEAM) 137 aircraft
Model HC-B4MP-3A propellers fitted to BEECH 1900C aircraft
Model HC-B4MP-3B propellers fitted to BEECH 300, 300LW aircraft
Model HC-B3TF-7A propellers fitted to BEECH A36, A36TC aircraft
Model HC-B4MP-3C propellers fitted to BEECH B300, B300C aircraft
Model HC-B4MN-5AL propellers fitted to CASA C-212-CC and -CF aircraft
Model HC-B3TF-7A propellers fitted to CESSNA 206 aircraft
Model HC-B3TF-7 propellers fitted to CESSNA 402 aircraft
Model HC-B3MN-3 propellers fitted to CESSNA 208, 208A and 208B aircraft
Model HC-B3TN-3AEY, -3AF propellers fitted to CESSNA 208, 208A and 208B aircraft
Model HC-B3TF-7A propellers fitted to CESSNA P210N aircraft
Model HC-B3TN-3AEY propellers fitted to DE HAVILLAND CANADA DHC-3 aircraft
Model HC-B4TN-5NL propellers fitted to DE HAVILLAND CANADA DHC-3 aircraft
Model HC-B5MA-3M propellers fitted to DE HAVILLAND CANADA DHC-4 aircraft
Model HC-B4TN-5ML propellers fitted to DORNIER DO228-100, -101, -200, -201, -202 and -212 aircraft
Model HC-B4TN-5L propellers fitted to DORNIER DO228-200, -201, -202 and -212 aircraft
Model HC-B5MA-3(J, M, C) propellers fitted to DOUGLAS DC-3C aircraft
Model HC-B5MA-2 EMBRAER EMB-314 aircraft
Model HC-B4TN-5EL, -5HL, -5KL propellers fitted to FAIRCHILD AIRCRAFT SA-226T(B) aircraft
Model HC-B3TF-7, -7A propellers fitted to FLUG & FAHRZEUGWERKE AG AS202/32TP aircraft
Model HC-B3TF-7A propellers fitted to FUJI KM-2D (T-5) aircraft
Model HC-B5MP-5 propellers fitted to GRUMMAN S-2 aircraft
Model HC-B5MA-5H propellers fitted to GRUMMAN S-2F3AT aircraft
Model HC-3BTF-7A propellers fitted to MAULE M-7-420 and MX(T)-7-420 aircraft
Model HC-B4TN-5DL, -5GL, -5JL propellers fitted to MITSUBISHI MU-2B-25A, -26A, -30, -35A, -36A, -40 (MU-2P), -60 (MU-2N) aircraft
Model HC-B5MP-3(A) propellers fitted to NORD 262 FRAKES aircraft
Model HC-B5MP-3C propellers fitted to NORMAN AEROPLANE NAC 6-65 aircraft
Model HC-B5MP-3D propellers fitted to POLISH AVIATION (MIELEC) M-28 and -28B aircraft
Model HC-B5MP-3G propellers fitted to POLISH AVIATION (MIELEC) M-28B aircraft
Model HC-B3TN-5U propellers fitted to PZL MIELEC M18 aircraft
Model HC-B4TN-5NL propellers fitted to PZL MIELEC M18 aircraft
Model HC-B5MP-5BL propellers fitted to PZL MIELEC M18 aircraft
Model HC-B5MP-3C propellers fitted to PZL MIELEC M18, M18A and M18B aircraft
Model HC-B4MN-5B propellers fitted to ROCKWELL OV-10 (LEFT SIDE) aircraft
Model HC-B4MN-5BL propellers fitted to ROCKWELL OV-10 (RIGHT SIDE) aircraft
Model HC-B5MP-3A propellers fitted to SHORT BROTHERS SD3-30 aircraft
Model HC-B5MP-3C propellers fitted to SHORT BROTHERS SD3-60-200 and SD3-SHERPA-200 aircraft

Model HC-B3TF-7A propellers fitted to SIAI MARCHETTI (AERMACCHI) F.260C and D aircraft
Model HC-B3TF-7A propellers fitted to SIAI MARCHETTI (AERMACCHI) SM-1019 aircraft
Model HC-B3TF-7A propellers fitted to SIAI MARCHETTI (VULCANAIR) SF600 CANGURO aircraft
Model HC-B5MP-3(F) propellers fitted to THRUSH AIRCRAFT S-2R-T660 aircraft
Model HC-B3TN-5FL, -5NL TWIN COMMANDER 690A, 690B and 690C aircraft
Model HC-B3TF-7A propellers fitted to VALMET L-90TP aircraft
Model HC-B3TF-7A propellers fitted to VUCANAIR (PARTENAVIA) AP68TP-300 and -600 aircraft.

Note 1: Affected propellers are known to be installed on, but not limited to the above mentioned aircraft models. This AD is also applicable to all other aircraft fitted with affected steel hub turbine propeller models with counterweight slug bolts P/N B-3386-14H from LFC manufacturing lot 224.

Requirement: To prevent separation of a propeller blade counterweight slug which could result in injury and damage to the aircraft, determine if propeller blade counterweight slug bolts P/N B-3386-14H from LFC manufacturing lot 224 are fitted to the propeller.

If affected counterweight slug bolts are fitted to the propeller replace the bolts with serviceable bolts before further flight.

Note 2: For the purpose of this AD a serviceable counterweight slug bolt is a P/N B-3386-14H bolt from a LFC manufacturing lot other than lot 224.

Note 3: Accomplish the identification, removal and replacement requirements in this AD per paragraphs 3.A.(1) through to 3.A.(4)(b)5 in Hartzell Propeller Inc. ASB No. HC-ASB-61-313 revision 2, dated 27 March 2009.

(FAA AD 2009-10-14 refers)

Compliance: Within the next 50 hours TIS unless previously accomplished.

Effective Date: 25 June 2009

DCA/HARTZ/159 Propellers Hubs – Inspection and Replacement

Applicability: Model ( )HC-( )2Y(K,R)-( ) series propellers fitted with propeller hubs <u>without a S/N suffix</u> and those propeller hubs <u>with an 'E' S/N suffix</u> that are fitted to Lycoming O-, IO-, LO-, LIO-, TO-, LTO-, AIO-, AEIO- and TIO-360 engine series.

Note 1: This AD supersedes DCA/HARTZ/153 to expand the propeller and engine applicability. The parentheses in the propeller model number indicates the presence or absence of an additional letter(s) which varies the basic propeller model designation. This AD still applies regardless of whether these letters are present or absent in the propeller model designation.

Requirement: To prevent failure of the propeller hub which could result in blade separation and loss of aircraft control, accomplish the following:

Perform an eddy current inspection (ECI) of the front cylinder half of the propeller hub for cracks per the instructions in paragraphs 3.A. through to 3.A.(4)(g) of Hartzell Propeller Inc. SB No. HC-SB-61-269 revision 3 dated 17 September 2007.

If any cracks are found, replace the propeller hub before further flight.

If no cracks are found, mark the propeller to indicate initial AD compliance per the instructions in paragraph 3.A.(6)(a) of SB No. HC-SB-61-269.

Note 2: Do not repetitively mark the propeller once it is initially marked per the requirements of this AD.

Note 3: Hartzell Propeller SB No. HC-SB-61-269 revision 4 dated 13 November 2009 is approved as an alternate method of compliance with DCA/HARTZ/159.

Note 4: Any propeller hub P/N D-6522-1 retired from service by AD DCA/HARTZ/142 (FAA AD 2003-01-03 refers) must not be returned to service with the accomplishment of this AD.

Note 5: This AD is not applicable to model ()HC-()2Y(K, R)-() series propellers fitted to aerobatic aircraft (including certificated aerobatic aircraft, military trainers or any aircraft routinely exposed to aerobatics); agricultural aircraft; Piper PA-32() series aircraft fitted with Lycoming 540 series reciprocating engines rated at 300 hp or higher; and Britten Norman BN-2() series aircraft fitted with Lycoming 540 series reciprocating engines. AD DCA/HARTZ/134F (FAA AD 2001-23-08 refers) is applicable to these aircraft and addresses the same unsafe condition.

Note 6: The repetitive inspections required by this AD can be terminated if the propeller hub without a S/N suffix is replaced with a propeller hub identified with an "A" or "B" S/N suffix. Do not install a suffix "A" propeller hub that was previously installed on an aircraft affected by the original issue or later revision of Hartzell Propeller Inc. SB No. HC-SB-61-227. Replacement propeller hub P/N can be found in the material information in paragraph 2.A. of SB No. HC-SB-61-269.

Note 7: Hartzell SB No. HC-SB-61-227 revision 2, dated 18 April 2005, and AD DCA/HARTZ/134F (FAA AD 2001-23-08 refers) pertains to the subject of this AD.

(FAA AD 2009-22-03 refers)

Compliance: Within the next 50 hours TIS unless previously accomplished, and thereafter at intervals not to exceed 100 hours TIS.

Effective Date: 26 November 2009

From 1 October 2012 the Civil Aviation Authority of New Zealand (CAA) will no longer rewrite the text of State of Design ADs. Applicable State of Design ADs will be listed below with linked directly to them. You can also obtain them directly from the National Airworthiness Authority (NAA) web sites. Links to the NAA web sites are available on the CAA web site at http://www.caa.govt.nz/Airworthiness_Directives/states_of_design.html
If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ they will be added to the list below.

72-08-04 **T10173( ) and T10176( ) Blades – Inspection and Replacement**

(DCA/HARTZ/122 refers)

Effective Date: 11 April 1972

87-15-05R1 **Propeller Blades – Inspection and Replacement**

Effective Date: 2 December 1987

94-03-11 **Propeller Hub Arm Assemblies – Inspection and Replacement**

Effective Date: 28 February 1994

95-03-03 **Propeller Hub Arm Bore – Inspection and Replacement**

Effective Date: 17 March 1995

*** 2013-15-04** **Hydraulic Bladder Diaphragm**

Effective Date: 30 August 2013